



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/992,922	11/05/2001	Miroslav Trajkovic	US 010580	6981
24737	7590	02/16/2005	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			KASSA, YOSEF	
			ART UNIT	PAPER NUMBER
			2625	

DATE MAILED: 02/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/992,922	<b>Applicant(s)</b> TRAJKOVIC, MIROSLAV	
	<b>Examiner</b> YOSEF KASSA	<b>Art Unit</b> 2625	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-5, 7-12 and 14-19 is/are rejected.
- 7) ☒ Claim(s) 6, 13 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Arguments***

1. Applicant's arguments/amendment, see (page 3-7) filed on November 12, 2004 with respect to the rejection of claims 1-5, 7-12 and 14-19 under Shashua (U.S. Patent 6,094,198), and in view of Torr et al (U.S. Patent 6,668,080), have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made on under Shashua (U.S. Patent 6,094,198), and further in view of Szeliski (U.S. Patent 6,137,491),

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7-12 and 14-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Shashua (U.S. Patent 6,094,198), and Szeliski (U.S. Patent 6,137,491).

With regard to claim 1, Shashua discloses an image processor processing an image sequence (see Fig. 1, item 14), selects an image pair (Fig. 2, image  $\psi_1$  and  $\psi_2$ ) from the image sequence (see col. 6, lines 53-56), the selected image pair including one of two images to which the known infinity homography applies and an additional

Art Unit: 2625

image (see col. 3, lines 1-13, note that the depth value is generated using the homography generated by the homography generating means).

Shashua does not explicitly call for derives an infinity homography for the selected image pair from the known homography. At the same field of endeavor, Szeliski discloses this feature (see col. 6, lines 23-35 and also see col. 9, lines 28-35). At the time of the invention was made, it would have been obvious to a person an ordinary skill in the art to incorporate the teaching of Szeliski's computing estimated homography process into Shashua's system. The motivation doing is to provide computing from set of initial pixels an estimated homography between images.

With regard to claim 2, Shasua discloses the image processor, in deriving the homography for the selected image pair, determines intermediate transfer parameters for a homography for the selected image pair (see col. 5, lines 20-36).

With regard to claim 3, Shasua discloses the image processor determines a scalar multiple for the homography for the selected image pair (see col. 5, lines 20-25) and a vector multiple of epipoles for the selected image pair (see col. 6, lines 4-15).

With regard to claim 4, Shasua discloses the additional image is sequential within the image sequence to one of the two images to which the known homography applies (see col. 3, lines 1-7) .

With regard to claim 5, Shasua discloses the two images to which the known homography applies are consecutive images within the image sequence (see col. 4, lines 5-12).

With regard to claim 7, Shasua discloses the known homography relates image

Art Unit: 2625

points for the second image within the image sequence to image points for the first image within the image sequence (see col. 4, lines 12-18).

Claim 8 is similarly analyzed as claim 1. As to the additional limitation of a video system including an input for receiving the image sequence (see col. 3, lines 40-46).

Claims 9-12 and 14 are similarly analyzed as claims 2-5 and 7.

Claims 15-19 are similarly analyzed as claims 1-5.

### ***Allowable Subject Matter***

3. Claims 6, 13 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Other Prior Art Cited***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. (6715888) to Raskar et al disclose method and system for displaying images on curved surfaces.

US Patent No. (6608923) to Zhang et al disclose system and method for rectifying images of...

US Patent No. (6527395) to Raskar et al discloses method for calibrating a projector with a camera.

US Patent No. (6353678) to Guo et al disclose method and apparatus for...

Art Unit: 2625

US Patent No. (6192145) to Ananda et al discloses method and apparatus for three dimension.

***Conclusion***

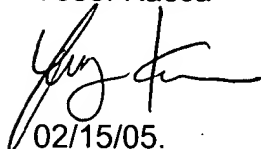
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOSEF KASSA whose telephone number is (703) 306-5918. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BHAVESH MEHTA can be reached on (703) 308-5246. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9306 for regular communication and (703) 872-9306 for after Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is (703) 306-5631. The group receptionist number for TC 2600 is (703) 305-4700.

**PATENT EXAMINER**

Yosef Kassa



02/15/05.